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**Datasheet for the decision  
of 7 October 2022**

**Case Number:** T 1228/20 - 3.3.09

**Application Number:** 12162948.9

**Publication Number:** 2474234

**IPC:** A23F5/40, A23C11/00

**Language of the proceedings:** EN

**Title of invention:**  
Soluble foaming beverage powder

**Patent Proprietor:**  
Société des Produits Nestlé S.A.

**Opponent:**  
Koninklijke Douwe Egberts B.V.

**Headword:**  
Soluble foaming beverage powder/NESTLÉ

**Relevant legal provisions:**  
EPC Art. 56

**Keyword:**  
Inventive step - main request (no) - auxiliary requests (no)

**Decisions cited:**



**Beschwerdekammern**

**Boards of Appeal**

**Chambres de recours**

Boards of Appeal of the  
European Patent Office  
Richard-Reitzner-Allee 8  
85540 Haar  
GERMANY  
Tel. +49 (0)89 2399-0  
Fax +49 (0)89 2399-4465

**Case Number: T 1228/20 - 3.3.09**

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.09**  
**of 7 October 2022**

**Appellant:** Société des Produits Nestlé S.A.  
(Patent Proprietor) Entre-deux-Villes  
1800 Vevey (CH)

**Representative:** Plougmann Vingtoft a/s  
Strandvejen 70  
2900 Hellerup (DK)

**Respondent:** Koninklijke Douwe Egberts B.V.  
(Opponent) Vleutensevaart 35  
3532 AD Utrecht (NL)

**Representative:** Boulton Wade Tennant LLP  
Salisbury Square House  
8 Salisbury Square  
London EC4Y 8AP (GB)

**Decision under appeal:** **Decision of the Opposition Division of the  
European Patent Office posted on 23 March 2020  
revoking European patent No. 2474234 pursuant to  
Article 101(3) (b) EPC.**

**Composition of the Board:**

**Chairman** M. Ansorge  
**Members:** C. Meiners  
E. Kossonakou

## Summary of Facts and Submissions

- I. This decision concerns the appeal filed by the patent proprietor (appellant) against the opposition division's decision to revoke the patent in suit ("the patent").
- II. In its notice of opposition, the opponent (respondent) had requested that the patent be revoked in its entirety based on, *inter alia*, the ground for opposition under Article 100(a) EPC in combination with Article 56 EPC (lack of inventive step).
- III. The following documents submitted during the opposition proceedings are relevant for the decision:
- |     |  |
|-----|--|
| D1  | EP1627568 A1   |
| D2  | WO97/33482 A1  |
| D2A | EP0888066 B1   |
| D3  | WO01/08504 A1  |
| D9  | Data showing the composition of the coffee beverages in Tables 1 and 2 of the patent, submitted on 20 May 2019 |
- IV. In its decision, the opposition division found, *inter alia*, that the versions of the main and first auxiliary requests pending at that time lacked novelty. The version of the second auxiliary request pending at that time was held to lack an inventive step in view of document D2 as the closest prior art. Further, the version of the third auxiliary request pending at that time was not admitted to the proceedings.

- V. With its statement setting out the grounds of appeal, the patent proprietor filed a main request and seven auxiliary requests.
- VI. The board summoned the parties to oral proceedings and issued a communication under Article 15(1) RPBA 2020 in which it set out its preliminary opinion.
- VII. Together with a letter dated 28 September 2022, the appellant filed a new main request and new auxiliary requests 1 to 7.
- VIII. Claim 1 of the main request of 28 September 2022 reads as follows:

"1. A composition comprising a mixture of the following ingredients

a) a soluble foamer ingredient containing gas under pressure and releasing gas upon reconstitution and

b) soluble coffee powder having retarded solubility, wherein 50% of the soluble coffee dissolve in water at 85°C after 2 seconds or more with mechanical agitation at 100 rpm and

wherein the soluble foamer ingredient releases the gas being present upon addition of liquid in an amount of at least 1 ml of gas under ambient conditions, per gram of soluble foamer ingredient, and

wherein the foam is formed on the basis of the existing liquid color and it is only after the foam is formed that the color of the liquid is changing due to the dissolution of the soluble coffee powder."

IX. Compared with claim 1 of the main request, claim 1 of auxiliary request 1 comprises the additional limitation of "[,] and wherein the soluble foamer ingredient is a soluble creamer ingredient".

Claim 1 of auxiliary request 2 differs from claim 1 of the main request by the addition of "[,] and wherein the wherein [sic] the soluble coffee powder comprises soluble coffee particles coated by a coating agent which reduces the water solubility of the soluble coffee particles".

The subject-matter of claim 1 of auxiliary request 3 results from a combination of features from claim 1 of auxiliary requests 1 and 2.

Claim 1 of auxiliary requests 4 to 7 corresponds to claim 1 of the main request and auxiliary requests 1 to 3, respectively, but also includes the following underlined amendment: "wherein 50% of the soluble coffee dissolve in water at 85°C after 2 seconds or more with mechanical agitation at 100 rpm, wherein the time is measured after immersion[,]".

X. The appellant's arguments, where relevant to the decision, can be summarised as follows:

The main request and the auxiliary requests met the requirements of the EPC. Document D2 represented the closest prior art for the assessment of inventive step. The main objective described in the patent was to provide an instant coffee product having a foam with an improved whiteness. The compositions of claim 1 (of the main request) differed from the instant coffee products of D2 by the use of soluble foamers containing gas under pressure. The technical problem credibly solved

across the entire scope of claim 1 was the provision of a reconstitutable beverage composition forming a whiter foam upon reconstitution. D2 was only concerned with improving the foam whiteness of prior-art instant cappuccinos, and not with increasing the foam height of such beverages. In light of D2, a skilled person would not have had a reasonable expectation that substituting the coffee whiteners of D2 with foamers containing gas under pressure, as disclosed in D3, would have resulted in a cappuccino beverage having a whiter foam. D2 itself did not hint at this effect, and D3 was exclusively concerned with improving the foam height of instant cappuccino beverages. Moreover, as could also be inferred from the data provided in D9, there was no inextricable link between foam height and foam whiteness. Further, a skilled person would have abstained from applying the teaching of D3 to D2: they would have expected that particles of soluble coffee not yet dissolved would be caught in the forming foam layer if a more vigorous foamer ingredient (containing gas under pressure) were used. That way, the coffee particles in the froth would have been expected to add to the discolouration of the foam layer. Consequently, the subject-matter of claim 1 was not obvious in view of D2 as the closest prior art.

Even assuming that the objective technical problem in light of D2 was to provide instant coffee beverage compositions forming a whiter foam and an increased amount thereof upon reconstitution, the solution was not obvious in view of D2. A skilled person wishing to solve this dual problem would have had a reasonable expectation of success of increasing the amount of foam when substituting the creamer of D2 with the foamer ingredient of D3. However, they would not have expected to also improve the foam whiteness. It was only with

hindsight that a skilled person wishing to solve that dual problem would have been prompted to apply the teaching of D3 to D2.

In the same way, the subject-matter of the auxiliary claim requests involved an inventive step in view of D2 as the closest prior art.

XI. The respondent's arguments, where relevant to the decision, can be summarised as follows:

Document D2 was a suitable starting point for the assessment of inventive step. The compositions of claim 1 of the main request differed from the instant coffee beverage compositions of D2 by the soluble foamer ingredient comprising gas under pressure. The feature "wherein the foam is formed on the basis of the existing liquid color and it is only after the foam is formed that the color of the liquid is changing due to the dissolution of the soluble coffee powder" already formed part of the disclosure of the preferred embodiments of D2.

The time window needed to ensure foam formation prior to the dissolution of the coffee powder could be increased on one side or the other. This could be achieved by providing a more dissolution-retarded soluble coffee powder or by improving the solubility of the coffee whitener. It was not the presence or amount of trapped gas which was critical to achieving a whiter foam over D2. Rather, it was the speed at which the foamer ingredient dissolved relative to the coffee powder having retarded solubility.

The only technical effect achieved over the full scope of claim 1 was the provision of a higher amount of foam



per gram of soluble foamer ingredient. This was explicitly acknowledged in paragraph [0024] of the patent. The results obtained in the patent using coffee whitener in accordance with D2 were not directly comparable with those achieved using the compositions in accordance with claim 1.

There was no incompatibility between the compositions used in D2 and D3. On the contrary, it was clear from D2 that any available coffee whitener powder could be used (see page 7, lines 11 to 13). When starting from D2, a skilled person wishing to increase the foam height would thus be motivated to adopt the foamer of D3 to solve this problem. Claim 1 thus lacked an inventive step. This also applied to the compositions of claim 1 of the auxiliary requests.

#### XII. Requests

The appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of the main request or one of auxiliary requests 1 to 7, all submitted with the letter dated 28 September 2022.

The respondent requested that the appeal be dismissed.

## **Reasons for the Decision**

### *1. Inventive step (Article 56 EPC) - main request*

#### 1.1 The patent

The patent is concerned with the provision of a soluble beverage powder, in particular a soluble cappuccino powder, which, upon reconstitution, results in a beverage having a large amount of white foam. The beverage thus obtained looks like a real cappuccino made by steaming fresh milk and spooning the foam on top of a freshly extracted espresso (see paragraphs [0001] and [0002] of the patent).

#### 1.2 Closest prior art

According to the decision under appeal, the opposition division held document D2 to be the closest prior art for the assessment of inventive step. It is also common ground between the parties that D2 is the closest prior art for the subject-matter of claim 1. Like the patent, it is concerned with the provision of instant coffee products with whiter foam, so as to more closely resemble a traditional Italian cappuccino (page 1, lines 20 to 23). In order to retard the dissolution of the coffee powder, which acts as a staining agent on the forming foam, the coffee powder particles are coated with a coating layer. The soluble whitener powder contained in the soluble coffee beverage powder comprises gas for foaming (claim 1 of D2).

### 1.3 Distinguishing features

The board notes that the process feature "wherein the foam is formed on the basis of the existing liquid color and it is only after the foam is formed that the color of the liquid is changing due to the dissolution of the soluble coffee powder" of claim 1 already formed part of the disclosure of the preferred embodiments of D2. D2 includes embodiments involving the complete dissolution of the soluble whitener prior to the dissolution of the coffee powder (see page 9, lines 8 to 10). D2 teaches that it is critical to separate the dissolution of the foamer ingredient and the coffee powder having retarded solubility.

Moreover, the appellant stated in its submission of 28 September 2022 that the distinguishing feature was that the soluble foamers of claim 1 contained gas under pressure, whereas the foamers of D2 did not. As a result of containing gas under pressure, the soluble foamer ingredient of claim 1 releases at least 1 ml of gas per gram of foamer ingredient upon reconstitution in a liquid.

The board thus concludes that the distinguishing feature in claim 1 over D2 is that the soluble foamer ingredient contains gas under pressure, which is released "upon addition of liquid in an amount of at least 1 ml of gas under ambient conditions, per gram of soluble foamer ingredient [...]".

### 1.4 Associated technical effect and objective problem

#### 1.4.1 The appellant argued that the technical effect observed over the full scope of claim 1 was improved whiteness of the foams formed.

1.4.2 The board does not concur with this assessment. The reason for this is that the respondent's line of argument that D2 already comprises preferred embodiments in which the phases of foam formation and dissolution of the soluble coffee are fully separated is convincing. In this context, D2 states the following on page 4, lines 21 to 27: "[h]owever, if significant amounts of soluble coffee powder dissolve prior to the soluble whitener powder, the medium in which the soluble whitener powder dissolves will be acidic and brown. This leads to lumping and a brown foam. Therefore, the water solubility of the soluble coffee powder must be reduced or delayed. If desired, it is also possible to increase the water solubility of the soluble whitener powder in addition to delaying the solubility of the soluble coffee powder."

1.4.3 It is thus clear that D2 discloses the complete separation of the two phases in order to prevent brown coffee solution discolouring the foam. As was correctly mentioned by the respondent, it is the relative dissolution speed of the two ingredients which establishes the time window between foam formation and coffee powder dissolution. The respondent's argument that it did not matter whether this time window is widened by increasing the solubility of the foamer ingredient or increasing the retardation of the dissolution of the coffee powder is convincing. It is thus also convincing that D2 already provides instant coffee compositions which, upon reconstitution, yield beverages having foam whiteness degrees of a real cappuccino. The examples provided in Example 1 of the patent do not undermine this conclusion, as they deal with specific embodiments which cannot call into question the fact that D2 discloses variants with

complete separation of foam formation and coffee dissolution. Moreover, the appellant conceded in its grounds of appeal on page 31, third paragraph, that "[i]f the soluble coffee powder is heavily retarded, the foam develops in a substantially clear liquid because no soluble coffee solids dissolve until after foam formation has been completed."

- 1.4.4 At the same time, the appellant argued that it was primarily the foam surface which determined the whiteness of the foams as measured in the patent. The most critical requirement in order to provide a white foam was that foam formation began before a substantial amount of soluble coffee powder had dissolved (see the last paragraph on page 31 and the first two paragraphs on page 32 of the grounds of appeal). The appellant also argued in the oral proceedings that the objective technical problem was to reduce discoloration since less coffee ended up in the foam, which therefore became whiter.
- 1.4.5 It is precisely this, however, that is already described in D2. As already stated, D2 hints at increasing the water solubility of the coffee whitener in addition to retarding solubility of the coffee powder (see claim 1 and page 4, lines 21 to 27).
- 1.4.6 The board therefore concurs with the respondent's conclusion that, in view of D2, the effect of improved foam whiteness is not credibly obtained over the full scope of claim 1.
- 1.4.7 This conclusion holds all the more since claim 1 does not specify the colour of the "foamer ingredient" (or "creamer ingredient"). As was correctly put forward by the respondent, the foamer or creamer ingredient can

even comprise colourants (see paragraph [0033] of the patent).

1.4.8 While the cappuccino beverages described in comparative embodiments 4 to 6 of Table 1 (embodiments in accordance with D2A as the European patent based on D2) and the embodiments in Table 2 of the patent are not directly comparable in terms of their composition, it can be inferred from the data provided that increasing amounts of the foamer ingredient gives rise to greater amounts of foam. This is also reflected in paragraph [0024] of the patent. The appellant put forward in section 4.8.1.2. of its grounds of appeal that samples/embodiments 7 to 9 of Example 2 were directly comparable with samples 4 to 6 of Example 1 of the patent since they all contained 10 g of whitener. This argument also supports the fact that the data in Tables 1 and 2 demonstrate that greater amounts of foam are generated per gram of foamer compared to each gram of D2's coffee whitener. Thus, in view of the data at hand there is no reason to call into question the general statement in paragraph [0024] that the foamer ingredients as specified in claim 1 generate greater amounts of foam than the whiteners of D2.

1.4.9 It follows from these considerations that the *objective technical problem* credibly solved across the entire scope of claim 1 is the provision of a reconstitutable beverage composition (such as an instant cappuccino powder) forming an increased amount of foam upon reconstitution.

1.5 Obviousness

1.5.1 In view of the following considerations, the solution to this problem is obvious to a skilled person in view

of D2 as the closest prior art and the information contained in document D3 as a secondary source of information.

- 1.5.2 D2, as the starting point for the assessment of inventive step, is also concerned with the provision of a cappuccino *more closely resembling an Italian cappuccino*. The solution envisaged in D2 involves the retardation of the dissolution of the coffee powder, which acts as a staining agent. Further, D2 proposes increasing the water solubility of the soluble whitener powder in addition to delaying the solubility of the soluble coffee powder (page 4, lines 21 to 27).
- 1.5.3 The key properties mentioned in the patent in paragraph [0019] for obtaining a more *authentic* cappuccino are firstly a high amount of foam (cf. Example 3 of the patent, which mentions a foam height of 21 mm) and secondly a white foam. According to paragraphs [0014] and [0015] of the patent, the colour of the beverage depends on the amount of coffee powder used. Higher amounts of coffee bring about a darker foam colour and lower amounts of coffee a lighter foam colour.
- 1.5.4 Firstly, a skilled person would infer from the results obtained in D2 for reconstituted cappuccino compositions that the foam heights obtained in the examples (6 mm in light of the comparative examples of the patent, reflecting embodiments of D2a/D2) are not satisfactory, i.e. they do not correspond to the foam heights of "real" cappuccino beverages. The argument put forward by the appellant that it was not stated anywhere in D2 that the foam height of prior-art instant cappuccinos was considered unsatisfactory is thus not convincing.

- 1.5.5 As a second consideration, a skilled person wishing to create a more authentic cappuccino beverage (looking like a real cappuccino) would look for more effective foaming ingredients, and would consequently take the teaching of D3 into account.

A skilled person would infer from D3 that by using a creamer ingredient as described therein, comprising gas under pressure and releasing gas upon reconstitution in an (aqueous) liquid in amounts of at least 1 ml per gram (see claim 1), a cappuccino beverage can be obtained having a foam height which comes close to that of a real cappuccino. D3 also aims at providing soluble instant beverage compositions which, upon reconstitution, more closely resemble a traditional Italian cappuccino.

The problem addressed in D3 is to increase the foam height formed and to provide a light, fluffy and stable foam (see the last paragraph on page 1). According to D3, soluble cappuccino beverage products comprise a soluble coffee powder and creamer powders containing pockets of gas. The latter produce foam upon dissolution (see the third paragraph on page 1). Hence, this scenario depicted in D3 for prior-art reconstitutable cappuccino beverage products reflects the technical teaching of D2 in respect of the creamer ingredient. The teaching of D2 and D3 is thus compatible.

- 1.5.6 As to the latter point, the appellant countered that a skilled person would have abstained from combining the teachings of D2 and D3 since they would have expected that particles of the undissolved coffee powder would be entrapped in the foam if a more vigorous foamer ingredient (containing gas under pressure) is used. The



coffee particles in the froth, however, would add to the discolouration of the foam layer.

Such an entrapment of solid coffee particles in the forming foam would have been expected by a skilled person. Further, the coffee powder of D1, containing gas under pressure, had been considered to be a soluble foamer within the meaning of claim 1. Paragraph [0054] of D1, however, raised concerns that undissolved coffee powder could get entrapped in the forming foam.

A skilled person would thus have expected to increase the foam height at the expense of the whiteness of the foam, and therefore would have abstained from applying the teaching of D3 to D2.

- 1.5.7 As to this argument, the board observes that a skilled person studying document D2 would adhere to the teaching of this document and would not consider document D1 or the concerns raised therein. As discussed in the oral proceedings before the board, even when considering paragraph [0054] of D1, a skilled person would infer from page 6, lines 32 *ff.*, of D2 that the density of the coffee particles should be kept at a level at which the coffee powder sinks in the water instead of rising to the surface, thereby becoming entrapped in the foam forming on the top of the beverage. Thus, when applying the teaching of D2, no concerns about the entrapment of coffee particles in the foam arise. Moreover, when concerned about the entrapment of coffee particles in the forming foam, a skilled person could select variants of the foamer ingredients of D3 which do not vigorously foam. There is therefore no incompatibility between the teaching of D2 and D3 in that respect either. Further, the appellant argued in its submission of 28 September 2022

on page 12 that a skilled person would expect to achieve the *same* whiteness as obtained in D2 by substituting the coffee whiteners of D2 with foamers containing gas under pressure as disclosed in D3.

- 1.5.8 D2 teaches that any suitable coffee whitener powder that comprises gas and is able to form a white, stable foam could be used (see page 7, lines 11 to 13, and claim 1). D3 features instant coffee compositions which, when reconstituted, yield a beverage having a fluffy and light foam resembling a traditional Italian cappuccino. A skilled person would therefore consider using the soluble foamer ingredient of D3 as the suitable whitener powder mentioned in D2.
- 1.5.9 Further, D2 does not teach against combining a more soluble foamer ingredient with a coffee powder exhibiting strong retardation of dissolution upon reconstitution. By contrast, D2 teaches that it is the relative time window between foam formation and coffee dissolution which determines the foam colour and that better solubility of the foamer ingredient (which is associated with earlier foam formation) might not be necessary for highly dissolution-retarded coffee powders.
- 1.5.10 Even within the context of the teaching of D2, a skilled person would infer that widening the time window between foam formation and coffee powder dissolution should give rise to a whiter foam. D2 includes embodiments involving the complete dissolution of the soluble whitener prior to the dissolution of the coffee powder (see page 9, lines 8 to 10).

There is thus no information in D2 which would lead the skilled person away from combining the teachings of D2 and D3.

1.5.11 A skilled person would thus consider applying the teaching of D3 to modify the soluble coffee beverage products of D2 with a reasonable expectation of success of obtaining a beverage closely resembling a traditional Italian cappuccino and having a greater amount of foam. Such a modification would merely imply the substitution of a conventional whitener powder containing gas, as used in D2, with a creamer ingredient of D3 containing gas under pressure.

1.5.12 Thus, the subject-matter of claim 1 is obvious in view of D2 as the closest prior art and does not involve an inventive step (Article 56 EPC).

2. *Inventive step (Article 56 EPC) - auxiliary requests 1 to 7*

2.1 The appellant did not provide additional arguments in favour of the allowability of auxiliary requests 1 to 7 in respect of the requirement of Article 56 EPC. Instead, the appellant stated that it wished to rely on its written submissions.

2.2 The board notes that the objections under Article 56 EPC that were put forward in respect of the main request apply *mutatis mutandis* to the subject-matter of claim 1 of auxiliary requests 1 to 7, as the additional features contained therein form part of the disclosure contained in document D2. Those features are the limitation that the soluble foamer ingredient is a soluble creamer ingredient and/or that the soluble coffee powder comprises soluble coffee particles coated

by a coating agent which reduces the water solubility of the soluble coffee particles. Moreover, the appellant has provided no arguments in favour of the impact on the inventive merit of the additional limitation of "wherein the time is measured after immersion" in claim 1 of auxiliary requests 4 to 7. This amendment merely specifies the conditions of measurement for determining the dissolution time of the coffee powder in water at 85°C. The board does not consider any inventive merit to have been contributed by this amendment either.

Hence, the subject-matter of claim 1 of auxiliary requests 1 to 7 also lacks inventive step and thus does not meet the requirements of Article 56 EPC.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:



M. Schalow

M. Ansorge

Decision electronically authenticated